What is Claimed:

1   1.   A method of using z-transform calculations to
2   encode carrier signal independent data to a digital
3   sample stream

1   2.   A method according to claim 1, wherein said
2   carrier signal independent data comprises digital
3   watermark data.

1   3.   A method according to claim 1, wherein location
2   and parameters vary based on a position of the
3   watermarking party in a distribution chain and what
4   type and how much information that party needs to
5   encode and decode in a watermark.

1   4.   A method of using z-transform calculations to
2   decode carrier signal independent data from a digital
3   sample stream.

1   5.   A method according to claim 4, wherein said
2   carrier signal independent data comprises digital
3   watermark data.

1   6.   A method according to claim 4, wherein location
2   and parameters vary based on a position of the
3   watermarking party in a distribution chain and what
4   type and how much information that party needs to
5   encode and decode in a watermark.

26

1   7.   A method of analyzing deterministic and non-
2 deterministic component of a signal, wherein said
3 signal is comprised of a digital sample stream, for
4 the purposes of encoding carrier signal independent
5 data to the digital sample stream, and encoding said
6 carrier signal independent data in a manner such that
7 it is restricted to or concentrated primarily in the
8 non-deterministic signal components of the carrier
9 signal,
10   wherein said signal components consist of at
11 least one of:
12   a discrete series of digital samples; and
13   a discrete series of carrier frequency sub-
14 bands of the carrier signal.

1 8.   A method according to claim 7, wherein said
2 carrier signal independent data comprises digital
3 watermark data.

1 9.   A method according to claim 7, wherein location
2 and parameters vary based on a position of the
3 watermarking party in a distribution chain and what
4 type and how much information that party needs to
5 encode and decode in a watermark.

1   10.   A method of using z-transform calculations to

2   measure a desirability of particular locations in a

3   sample stream in which to encode carrier signal

4   independent data, wherein the desirability is

5   comprised of a difficulty in predicting a component of

6   the sample stream at a location which can be measured

7   by an error function, wherein the component and

8   location may be comprised of information regarding at

9   least one of the following: wave, amplitude,

10   frequency, band energy, or phase energy.

1   11.   A method according to claim 10, wherein said

2   carrier signal independent data comprises digital

3   watermark data.

1   12.   A method according to claim 10, further

2   comprising a step of performing the z-transform of the

3   input sample series.

1   13.   A method according to claim 12, further

2   comprising a step of performing an inverse z-transform

3   to produce an estimated sample series including an

4   estimate of the signal represented by the digital

5   sample series.

1   14.   A method according to claim 13, further

2   comprising a step of computing an error function of

3 the estimated sample series versus the original input

4 sample series.

1 15. A method according to claim 14, further

2 comprising a step of using a computed error function

3 data as a measure of the desirability of a location

4 for encoding watermark information.

1 16. A method according to claim 14, further

2 comprising a step of determining a maximized error

3 function to determine an optimal watermark location

4 for encoding.

1 17. A method of encoding digital watermarks at

2 varying locations in a sample stream with varying

3 envelope parameters.

1 18. A method of using z-transform calculations to

2 determine portions of a signal which may be

3 successfully compressed or eliminated using certain

4 processing techniques.

1 19. A method of using z-transform calculations to

2 determine portions of a signal which may be

3 successfully compressed or eliminated using certain

4 processing techniques, without adverse impact on

5 signal quality.

1   20.   A method of encoding a digital watermark into a

2   digital sample stream such that the watermark

3   information is carried entirely in most non-

4   deterministic portions of the signal.

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